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(54) **HOSPITAL TELEPHONE AND DEVICE CONTROLLER**

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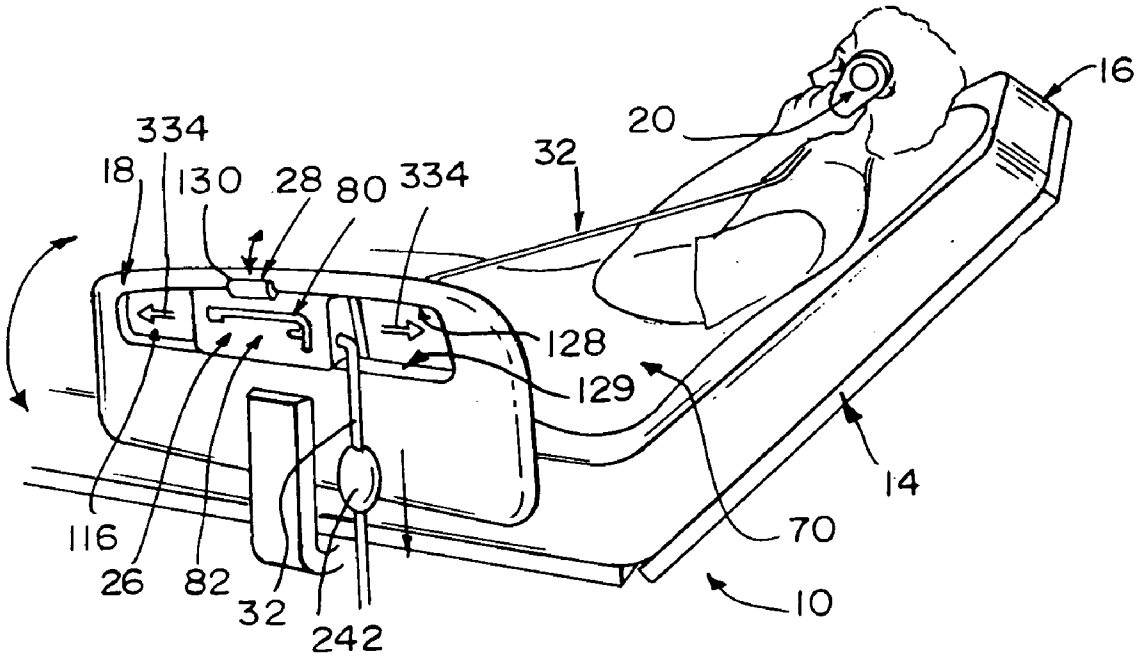
(52) **U.S. Cl.** **379/428.01**

(57) **ABSTRACT**

A hand-held pendant operating as a telephone and a controller of one or more functions of a patient-support apparatus is disclosed. The hand-held pendant has a complementary holster which mounts in the siderail of the patient-support apparatus and serves to retain the hand-held pendant. The hand-held pendant has two sides, one functioning as a telephone and the other as a controller for one or more functions of a patient-support apparatus.



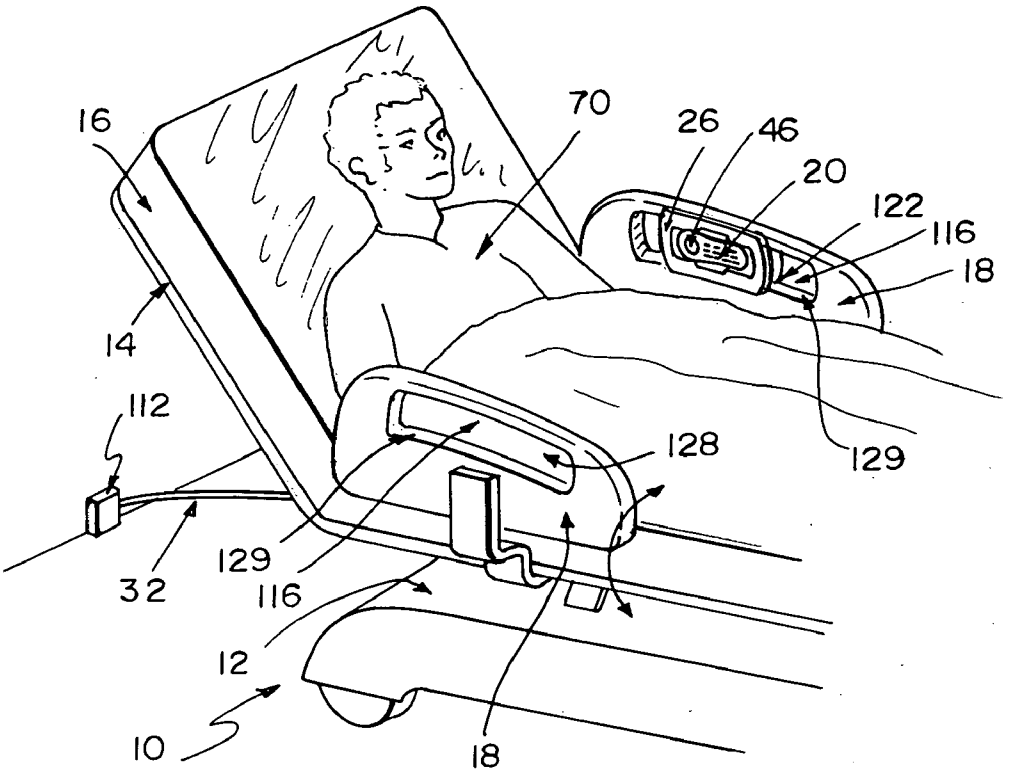

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FIG 1

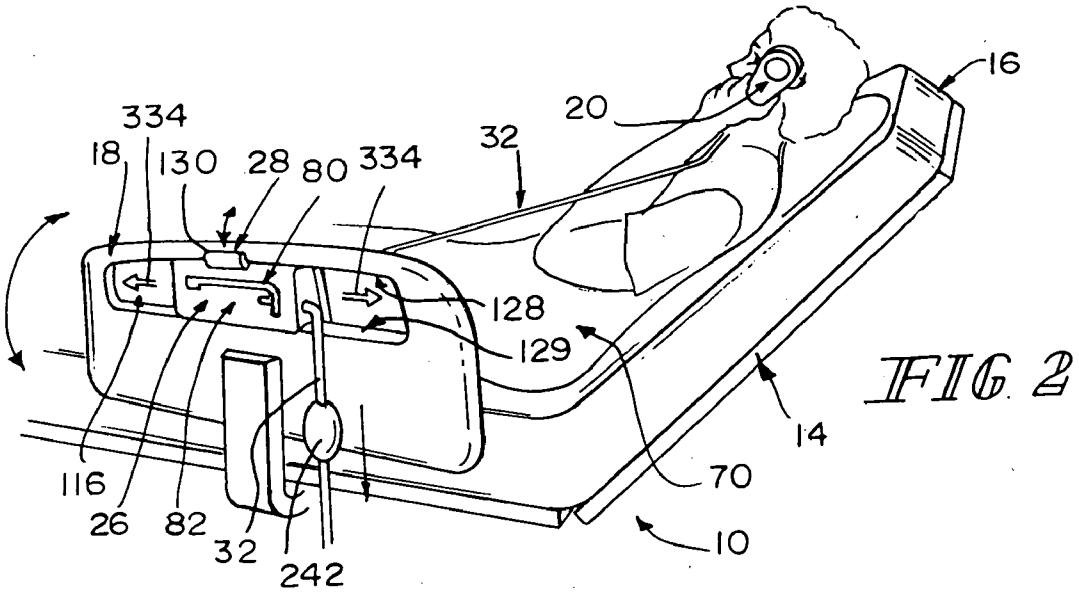
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FIG 2

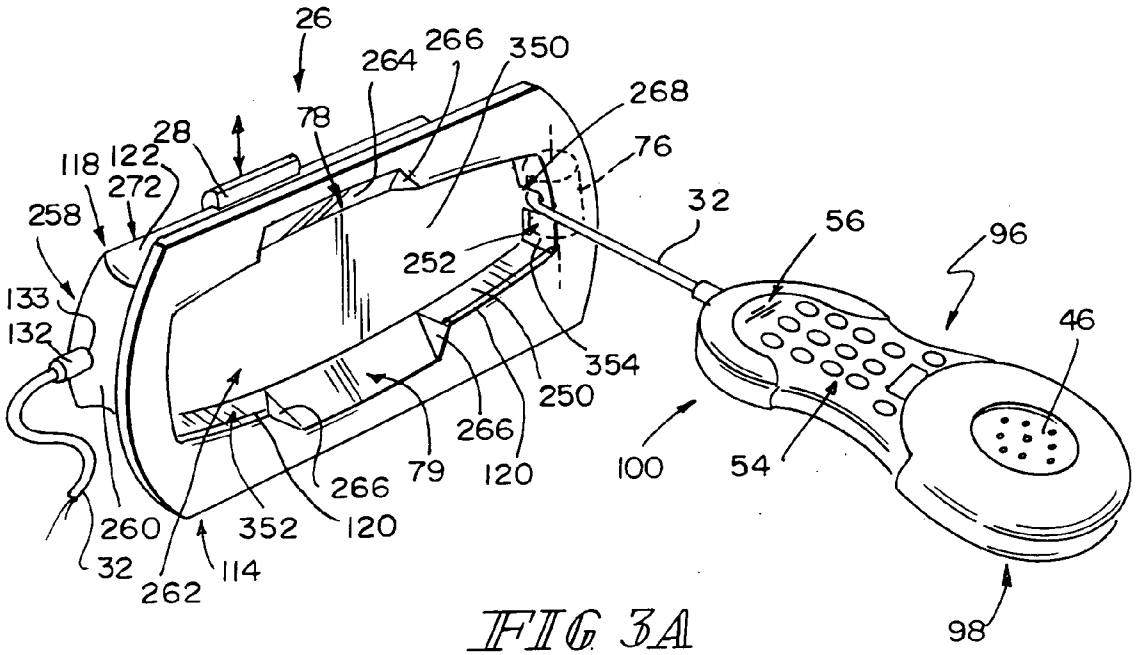
26
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FIG 3A

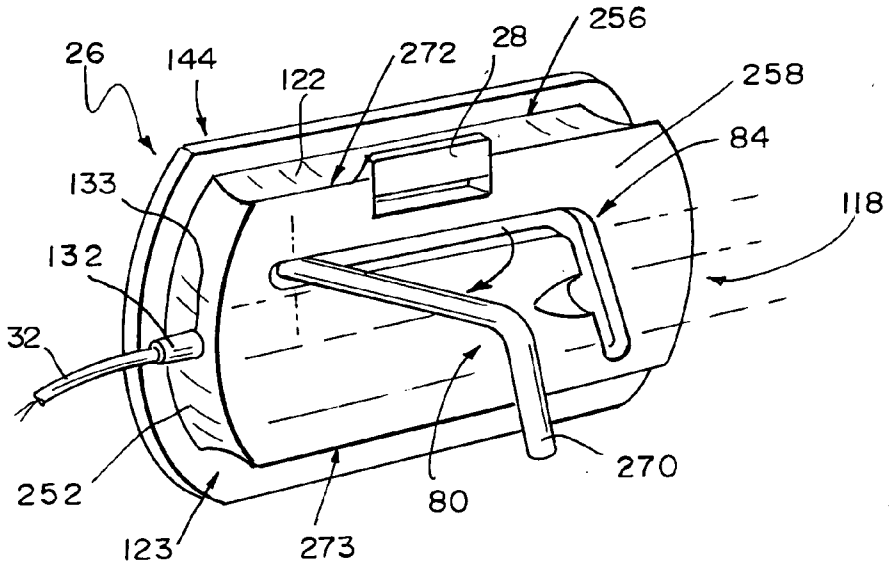
26
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FIG 3B

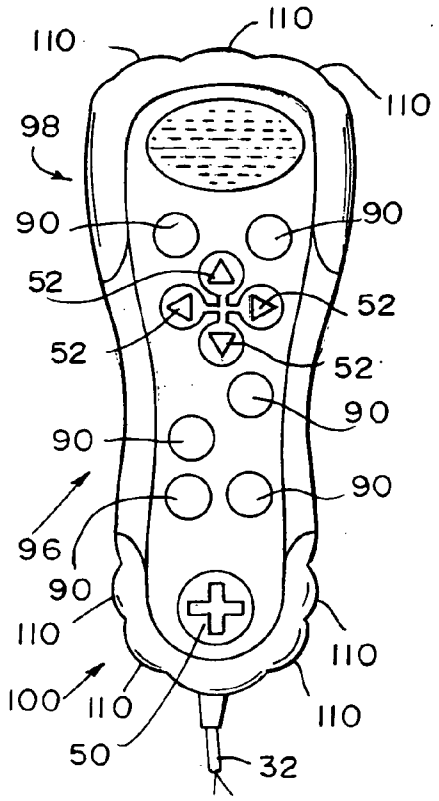

FIG 4

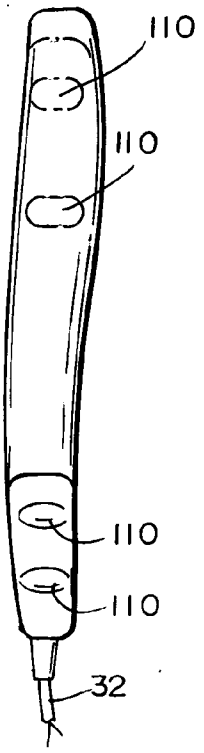

FIG 5

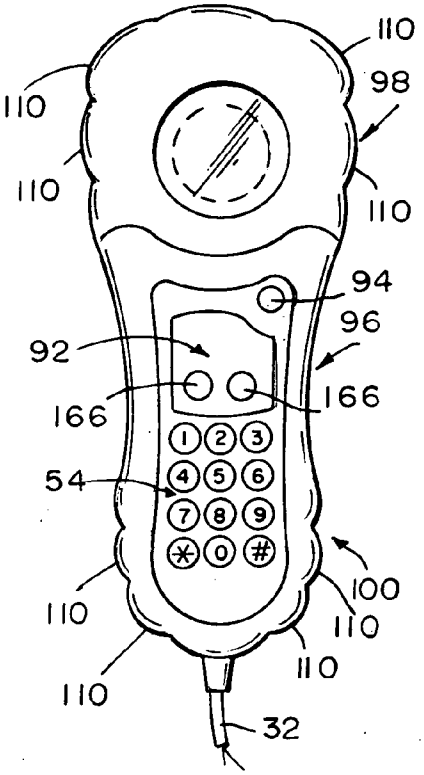

FIG 6

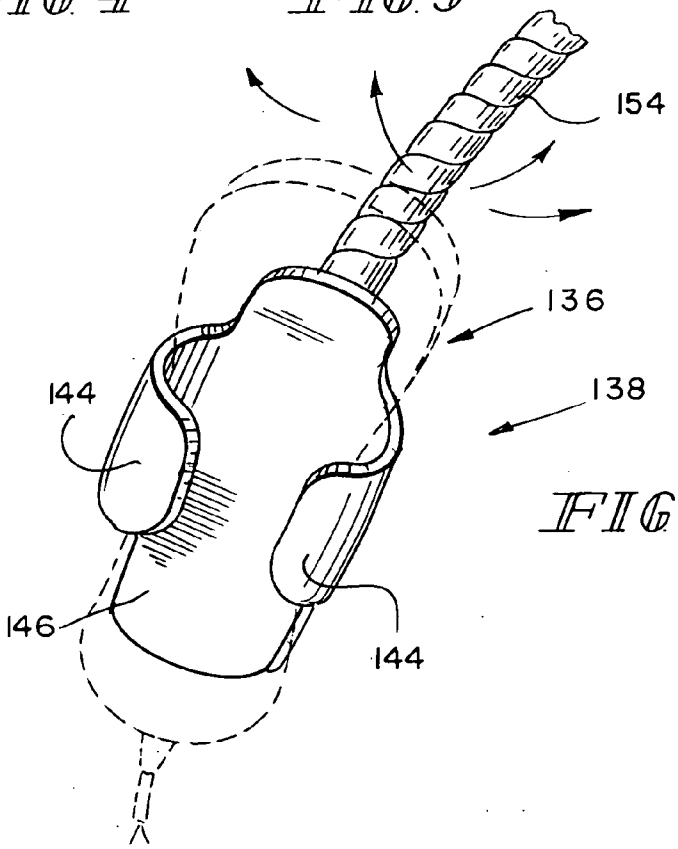

FIG 7

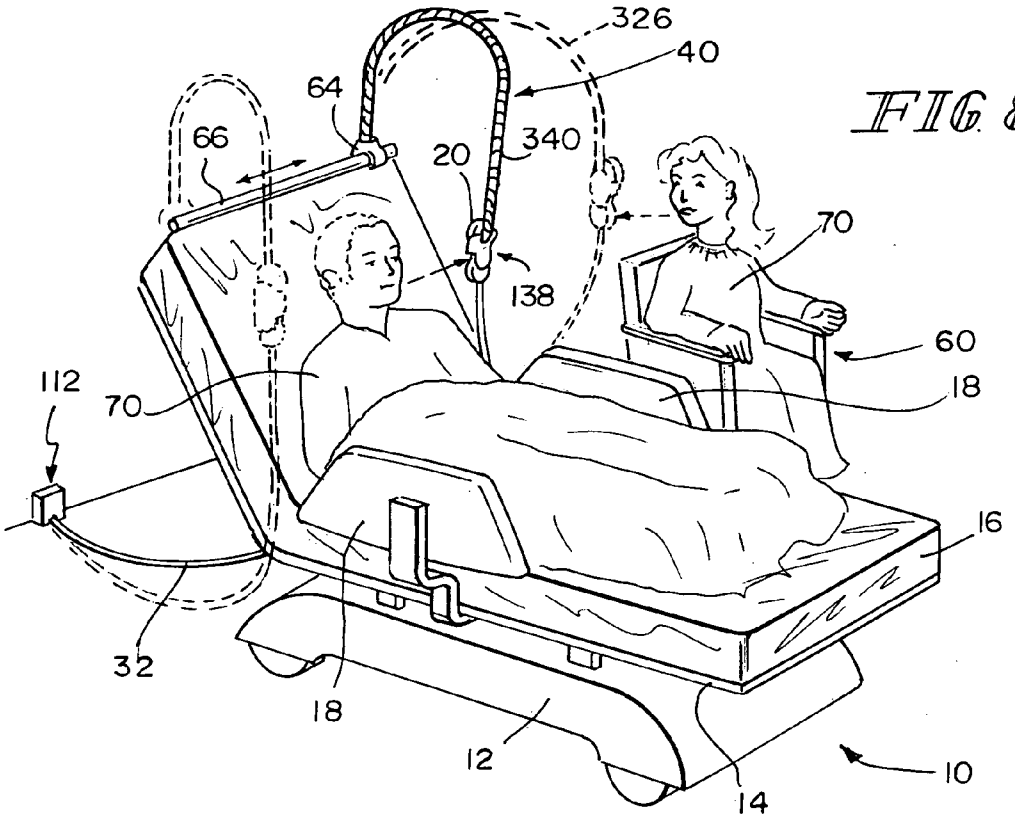

FIG. 8

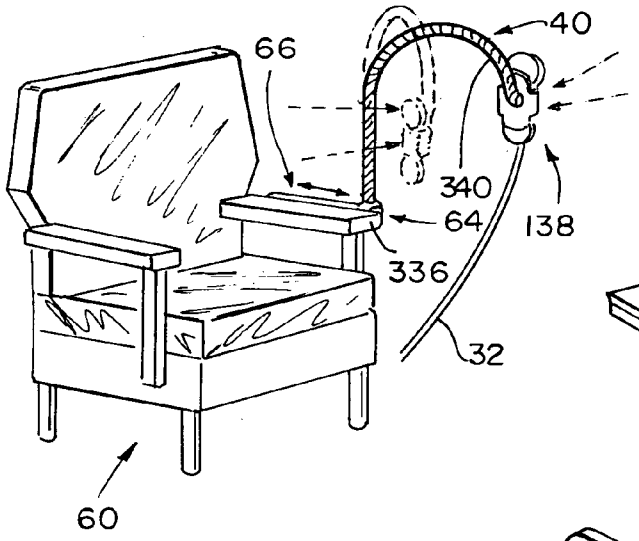

FIG. 9

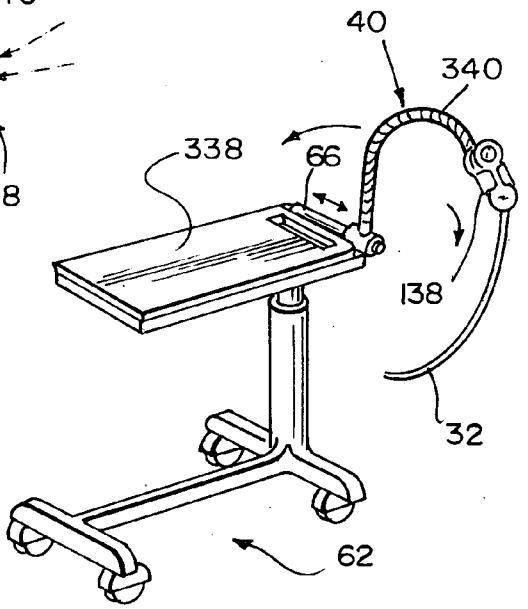

FIG. 10

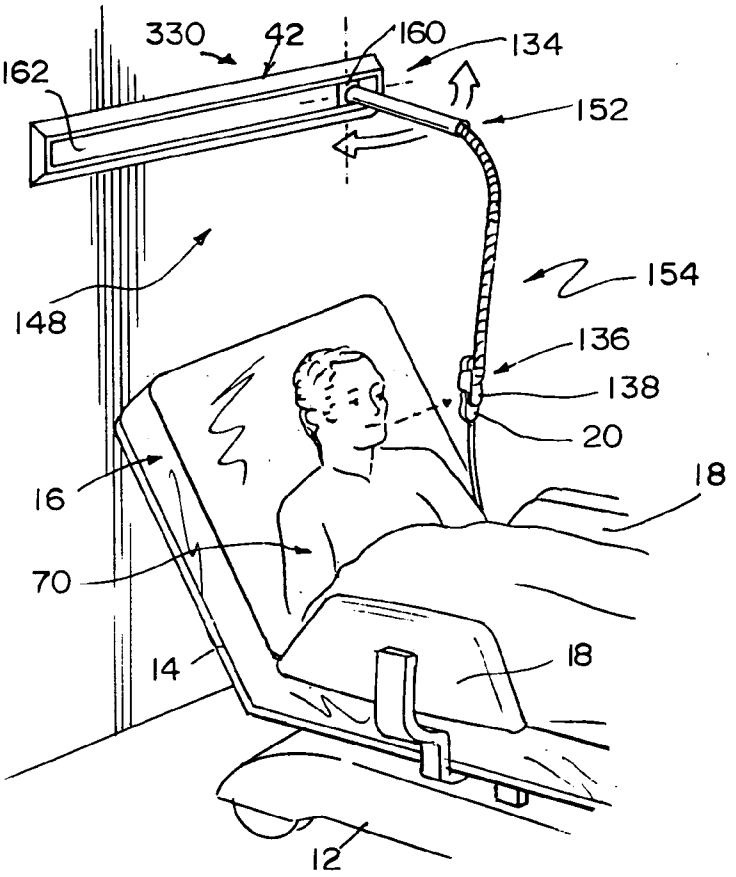
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FIG 11

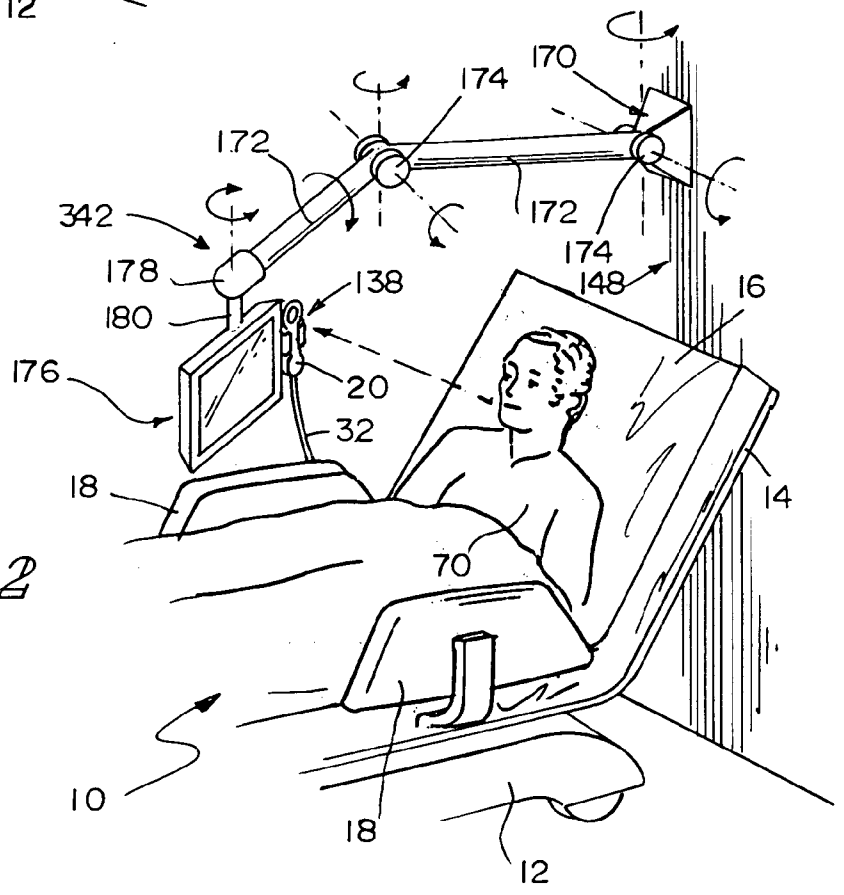
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FIG 12

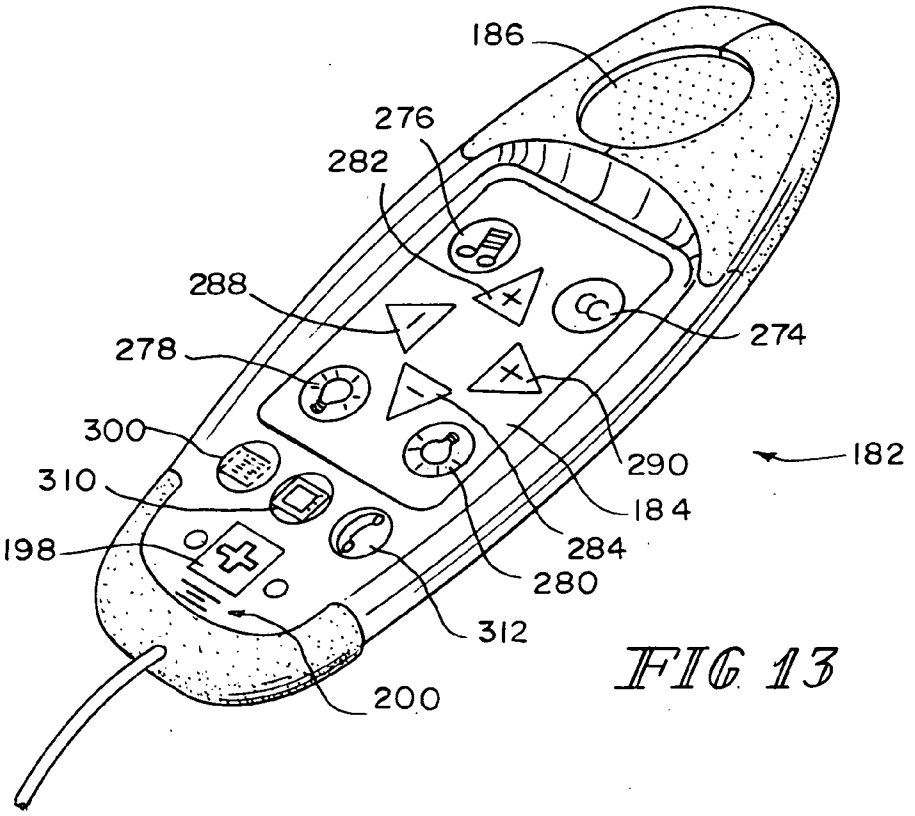

FIG 13

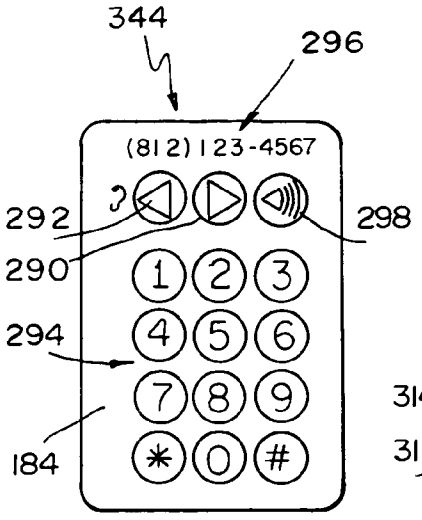

FIG 14

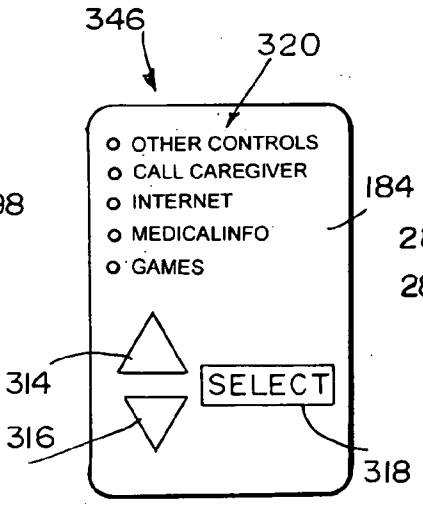

FIG 15

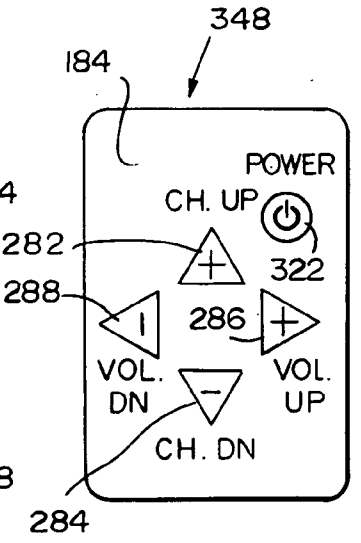

FIG 16

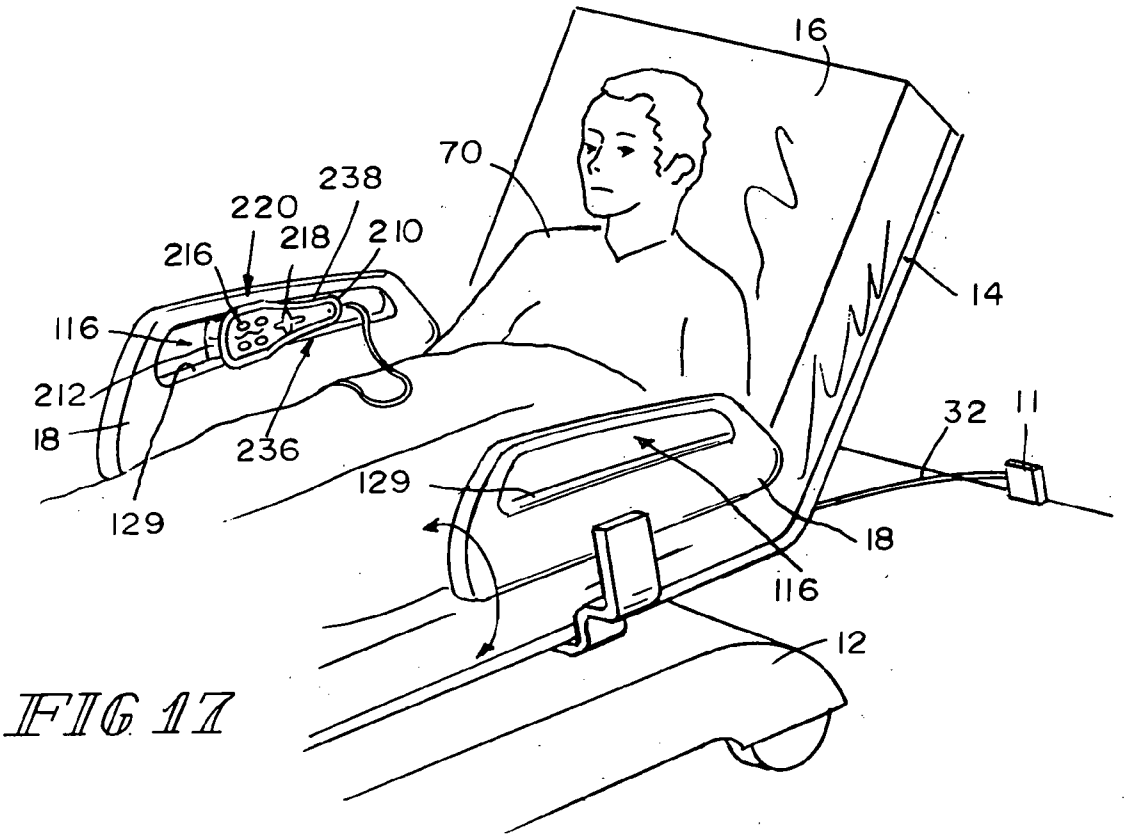
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FIG 17

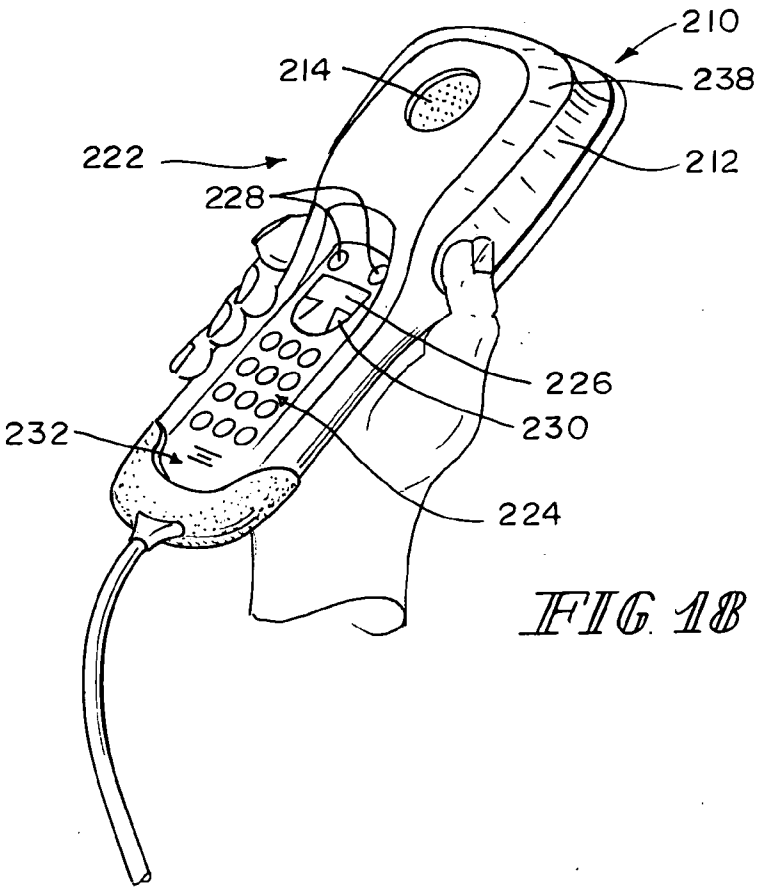
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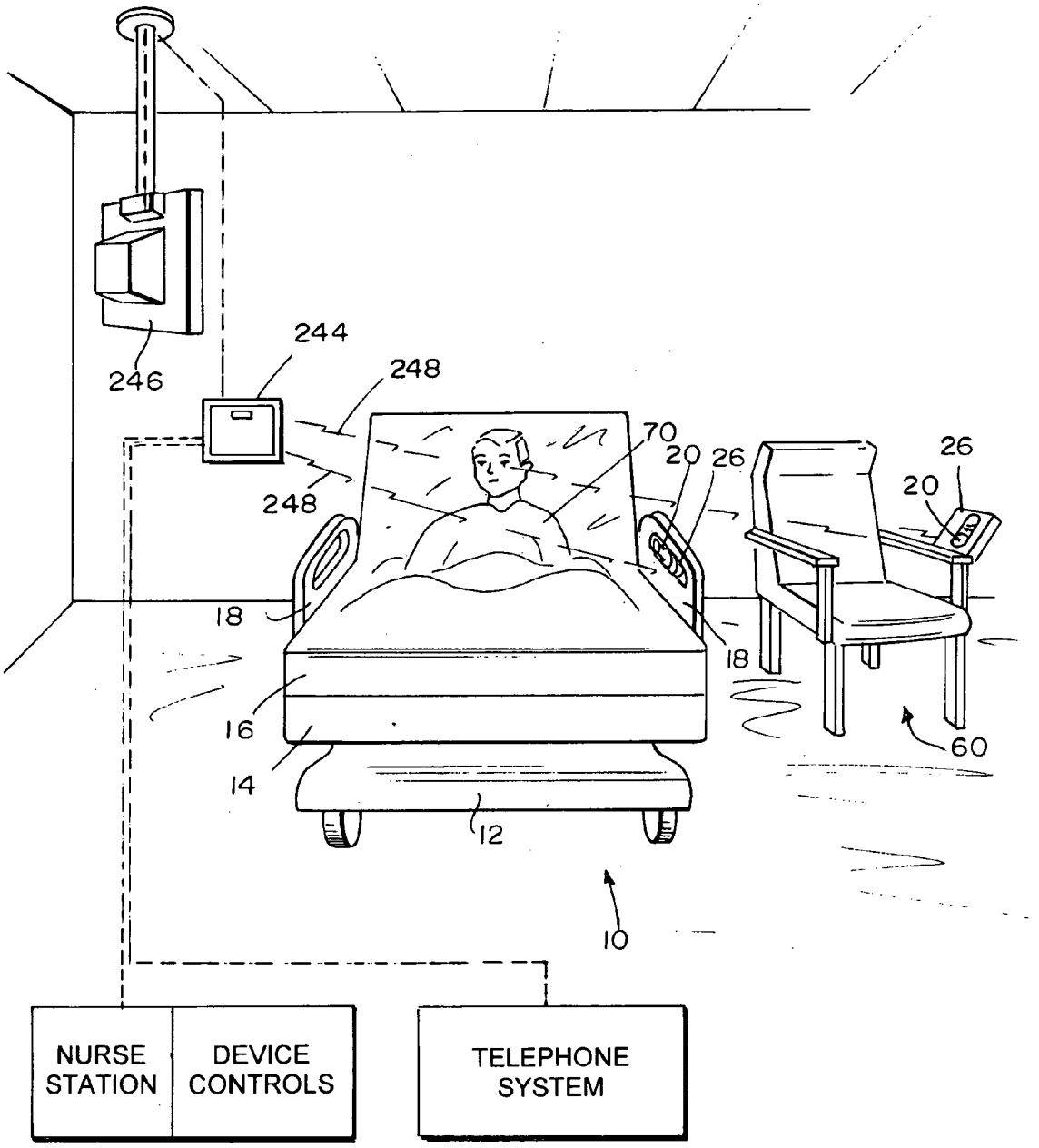
FIG 18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NURSE STATION
DEVICE CONTROLS
TELEPHONE SYSTEM

HOSPITAL TELEPHONE AND DEVICE CONTROLLER

RELATED APPLICATIONS

[0001] This application claims the benefit, under 35 U.S.C. § 119(e), of U.S. Provisional Patent Application Ser. No. 60/608,979 filed Sep. 10, 2004 which is hereby incorporated by reference herein in its entirety.

BACKGROUND OF THE INVENTION

[0002] The present disclosure relates to a pendant to be used in a hospital or other healthcare facility room for a patient to control various devices and equipment in the room or to communicate externally from the room. More particularly, the present disclosure relates to a pendant operating as both a controller and telephone with improved positioning so that it is readily accessible by the patient.

[0003] Various types of controllers and communication devices are known in the healthcare environment. Controllers coupled to hospital beds, bedside cabinets, and walls are known. Communication devices such as phones and nurse call apparatus are known to be coupled to hospital beds, bedside cabinets, and walls as well. Controllers may control any of a number of devices including the bed, mattress, lighting, television, radio, heating or air conditioning. Communications devices may include nurse call systems, telephones, and intercoms which are separate from controllers for bed functions.

SUMMARY OF THE INVENTION

[0004] The present invention comprises one or more of the features recited in the appended claims and/or the following features which, alone or in any combination, may comprise patentable subject matter:

[0005] In one embodiment of the invention a patient-support apparatus comprises a frame, a patient-support deck supported on the frame, a mattress supported on the patient-support deck, and a siderail coupled to the frame adjacent the mattress. The patient-support apparatus may further comprise a holster and a pendant supported by the holster. The pendant may function as both a telephone and a controller to receive user inputs that control at least some of the functions of the patient-support apparatus.

[0006] The holster may be attached to the siderail and moveable to a plurality of positions. The holster may be configured to hold the pendant until the pendant is removed from the holder. The pendant may have a cord connecting the pendant to an interface for a patient-support apparatus control and a telephone system. The cord may pass through the holster with some slack being stored in the holster. The cord may be retracted into the holster by a clock spring mechanism.

[0007] In another embodiment, the holster may be coupled to a support structure. The support structure may be coupled to the patient-support apparatus or to a piece of furniture in the room. The support structure may receive the holster and be movable by a user to a plurality of positions. In still another embodiment, the holster may be coupled to a support structure that is attached to a structure in the patient room such as a wall or the ceiling. The support structure may include a cord coupling the pendant to the patient-support apparatus. The cord may pass through an arm of the support structure.

[0008] The pendant may be substantially waterproof. The pendant may further comprise a disposable sanitary cover. The pendant may have two sides, with a first side having a user interface dedicated to the functions of the patient-support apparatus and a second side being dedicated to a user interface for a telephone. Alternatively, the pendant may further comprise a touchscreen user interface.

[0009] In some embodiments, the pendant may further comprise a wireless connection to the patient-support apparatus. In other embodiments, the retraction of the cord may be accomplished with the use of a weight on the cord outboard of the siderail which tends to pulls the cord through the holster when the user stows the pendant. In one embodiment, the holster is omitted and the pendant is configured to couple directly to the siderail for storage.

[0010] Additional features, which alone or in combination with any other feature(s), including those listed above and those listed in the claims, may comprise patentable subject matter and will become apparent to those skilled in the art upon consideration of the following detailed description of illustrative embodiments exemplifying the best mode of carrying out the invention as presently perceived.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] The detailed description particularly refers to the accompanying figures in which:

[0012] **FIG. 1** is a perspective view of a patient-support apparatus showing the patient side of a holster coupled to a siderail, with a hand-held pendant stowed in the holster;

[0013] **FIG. 2** is a perspective view of a patient-support apparatus showing the outboard side of a holster coupled to a siderail, with a weighted cord used to retract a hand-held pendant cord;

[0014] **FIG. 3A** is a perspective view of the patient side of a holster with a hand-held pendant extending from the holster;

[0015] **FIG. 3B** is a perspective view of the backside of the holster of **FIG. 3A** with a hook in an extended position;

[0016] **FIG. 4** is a front view of a hand-held pendant showing buttons useable to control functions of a patient-support apparatus;

[0017] **FIG. 5** is a side view of the hand-held pendant of **FIG. 4**;

[0018] **FIG. 6** is a back view of the hand-held pendant of **FIG. 4** showing buttons useable to control the telephone functions of the pendant;

[0019] **FIG. 7** is a perspective view of an alternative embodiment of a holster coupled to a flexible member of a support arm;

[0020] **FIG. 8** is a perspective view of a hospital bed with a support structure coupled to the bed by a mounting bar, the support structure being movable along the mounting bar between a first position (in solid) and a second position (in phantom), and the support structure includes a flexible arm

movable to support a holster and a hand-held pendant carried by the holster in a variety of positions;

[0021] **FIG. 9** is a perspective view of the support structure of **FIG. 8** coupled to a chair instead of a bed;

[0022] **FIG. 10** is a perspective view of the support structure of **FIG. 8** coupled to an overbed table instead of a bed;

[0023] **FIG. 11** is a perspective view of another embodiment of a support structure mounted to a horizontal track member that is mounted to a room wall;

[0024] **FIG. 12** is a perspective view showing an alternative embodiment of a support structure having an articulated arm mounted to a patient room wall, a display coupled to an end of the articulated arm, a holster coupled to the display screen, and a pendant carried by the holster;

[0025] **FIG. 13** is a perspective view of an alternative embodiment of a hand-held pendant wherein the hand-held pendant has a touchscreen display;

[0026] **FIG. 14** is a screen shot of the pendant of **FIG. 13** showing the touchscreen configured to control telephone functions of the pendant;

[0027] **FIG. 15** is a screen shot of the pendant of **FIG. 13** showing the touchscreen configured as an interactive menu;

[0028] **FIG. 16** is a screen shot of the pendant of **FIG. 13** showing the touchscreen configured to operate as an input device to alter television channel and volume settings;

[0029] **FIG. 17** is a perspective view of a patient-support apparatus with another embodiment of a pendant stowed directly into the opening of a siderail and a first side of the pendant facing toward a patient and having buttons to control functions of the patient-support apparatus;

[0030] **FIG. 18** is a perspective view of a second side of the pendant of **FIG. 17** showing the pendant having buttons useable to control telephone functions of the pendant; and

[0031] **FIG. 19** is a perspective view, partly diagrammatic, of a hospital room illustrating a hand-held pendant wirelessly communicating with a telephone system and with other devices.

DETAILED DESCRIPTION OF THE DRAWINGS

[0032] A hand-held pendant **20** shown in **FIG. 1** functions as both a telephone and a controller to receive inputs from a user to control one or more functions of a patient-support apparatus **10**. The patient-support apparatus **10** has a frame **12**, a patient-support deck **14**, a mattress **16**, a pair of siderails **18**, and a holster **26** in which hand-held pendant **20** is carried. Patient-support deck **14** is located above frame **12** and supports mattress **16** which is placed on top of patient-support deck **14**. A patient **70** lies on mattress **16**. Siderails **18** are adjacent to mattress **16** and are coupled to frame **12** for movement between raised positions, shown in **FIG. 1**, and lowered positions (not shown) down away from mattress **16** when not in use.

[0033] Referring now to **FIGS. 1 and 2**, holster **26** is couples to siderail **18**. Holster **26** includes a releasable latch **28** which retains holster **26** in the siderail. Latch **28** is spring loaded to provide positive engagement between holster **26** and siderail **18** until released by a user. Pendant **20** couples to holster **26** by snap-fit. A cord **32** couples pendant **20** to patient-support apparatus **10**. Cord **32** extends from holster **26** to pendant **20** through a retraction mechanism **76**. When pendant **20** is stowed in holster **26**, cord **32** spools into retraction mechanism **76** so as to remove any slack.

[0034] Referring to **FIGS. 2, 3A**, and **3**B, holster **26** a body **118** which occupies a portion the siderail opening **116** and a flange **114** which extends beyond the siderail opening **116** to engage the siderail **18** when the holster **26** is positioned in the siderail opening **116**. Flange **114** extends beyond the exterior periphery of body **118** and generally has a peripheral shape similar to the shape of the periphery of body **118**. The back of body **118** has an upper concave surface **122**, a lower concave surface **123**, a left side surface **260**, a right side surface **252**, and a back surface **258**. Concave surfaces **122, 123** have concavity following axes extending along the horizontal width of body **118**. Concave surfaces **122, 123** are complementary to twp convex surfaces **128, 129** of the upper and lower portions of siderail opening **116**. The front of body **118** has a cavity **262**. A surface **350** that is internal to cavity **262** and at the back of cavity **262** is shaped to conform to the surface of the second side of pendant **20** comprising the telephone functions such that pendant **20** may only be stowed with patient-support apparatus function controls exposed. The interior surface (not shown) of upper side **256** and an interior surface **352** of lower side **250** are shaped to receive the exterior profile of pendant **20**.

[0035] Flange **114** extends internally beyond a lower surface **352** and an upper side surface (not shown) of body **118** partially covering cavity **262** and forming a lip **120** which serves to retain pendant **20** when it is stowed in holster **26**. Lip **120** is sized such that pendant **20** slips past lip **120** which flexes when stowing or removing force is placed on lip **120**. Holster **26** has angled cut-outs **78** and **79** to permit gripping access by patient **70** to remove pendant **20** from holster **26**. Angled cut-out **78** begins at the interior intersection of surface **350** and the upper side surface (not shown). A surface **264** is formed and extends at an angle obtuse to surface **350** until surface **264** intersects with flange **114**. Angled cut-out **79** begins at the interior intersection of surface **350** and lower surface **352**. A surface **265** is formed and extends at an angle obtuse to surface **350** until surface **264** intersects with flange **114**. Angled cut-outs **78, 79** are horizontally centered in cavity **262** and have a width which is approximately one-third of the horizontal width of cavity **262**. A right side surface **354** of cavity **262** has a passage **268** for cord **32** to pass from retraction mechanism **76** to pendant **20**.

[0036] When holster **26** is placed into siderail opening **116**, concave surfaces **122, 123** snap over convex surfaces **128, 129** resulting in a removable and slidable coupling of holster **26** to siderail **18**. As indicated by arrows **334** in **FIG. 2**, holster **26** is configured to slide within siderail opening **116** to a number of positions within the longitudinal length of opening **116**. Body **118** is constructed of a material having sufficient flexibility to allow two edges **272, 273** to slip past convex surfaces **128, 129** providing retention of holster **26** in siderail opening **116**. The freedom of movement of holster **26** in siderail opening **116** permits the sliding movement of holster **26** to adjust the position of holster **26** within siderail opening **116**. To minimize unwanted movement, releasable latch **28** provides a positive engagement between holster **26**

and siderail **18**. Releasable latch **28** is biased to an engaged position pressing releasable latch **28** against convex surface **128** of siderail **18**. Releasable latch **28** is retained in body **118** which has a cavity **130** to permit releasable latch **28** to pass below edge **272** of body **118** as holster **26** is inserted into siderail opening **116**. The releasable latch **28** bias must be overcome to insert holster **26** into siderail **18**.

[**0037**] Upon installation, an extension spring (not shown) forces the releasable latch **28** upward against convex surface **128** to provide positive engagement with the siderail **18**. Holster **26** slides within siderail opening **116** when sufficient force is applied to holster **26** parallel to concave surfaces **122**, **123** and convex surfaces **128**, **129**. In other embodiments, mating of concave surfaces **122**, **123** to convex surfaces **128**, **129** may be replaced by other complementary linear shapes which mate to facilitate linear sliding motion. In some embodiments, bias of latch **28** may be accomplished by other devices suitable for creating bias including torsion springs, releasable latch being a flexible member attached to body **118**, or other biased constructions known to those of ordinary skill in the art. In still further embodiments, holster **26** does not slide relative to siderail **18** due to the coupling mechanism used, such as screws or rivets, for example, or due to holster **26** occupying substantially all of the opening or other holster-receiving space provided in siderail **18**.

[**0038**] Body **118** has an internal passage (not shown) routing electrical cord **32** from a cord inlet **132** to retraction mechanism **76**. A strain relief **132** is provided at the interface between cord **32** and body **118** adjacent inlet **133**. Retraction mechanism **76** is retained in holster **26** by a right side wall **252** of cavity **262**. When stowed, pendant **20** is retained behind lip **120**. Angled cut-outs **78**, **79** on holster **26** are positioned complementary to a grip area **96** on pendant **20**. The internal perimeter of flange **114** is sized to match the external periphery of pendant **20** such that pendant **20** can only be stowed with electrical cord **32** positioned at the same end of holster **26** as retraction mechanism **76**.

[**0039**] In an alternative embodiment, cord **32** further comprises a weight **242** which is coupled to cord **32** outboard of holster **26** and siderail **18** as shown in **FIG. 2**. In this embodiment, holster **26** does not have retraction mechanism **76**, but rather, cord **32** extends through a passage (not shown) in holster **26**. Weight **242** tends to pull slack in cord **32** through holster **26** when a user stows pendant **20**. Also in this embodiment, an end of cord **32** spaced from pendant **20** plugs into a receptacle elsewhere on patient-support apparatus **10** or in the patient room.

[**0040**] Holster **26** has a hook **80**, seen in **FIGS. 2 and 3**B, which is extendable from the back of holster **26** and is used as an alternative to placing holster **26** in siderail opening **116**. Hook **80** pivots when moving between a use position, shown in **FIG. 3B**, and a storage position, shown in **FIG. 2**. Hook **80**, when used, hooks over the top edge of siderail **18**. Hook **80** is biased to a storage position by a torsion spring (not shown). When hook **80** is placed over a portion of a patient-support apparatus **10**, such as a siderail **18**, having a thickness smaller than hook **80** can accommodate in its fully extended position, then hook will pivot under the bias of the torsion spring to clamp the portion of the patient-support apparatus **10** between an end portion **270** of hook **80** and back side **258** of pendant **20**. Holster **26** has a cavity **84** in back surface **258** adapted to receive hook **80** when in the storage position. Cord **32** extends from holster **26** to interface box **112** where telephone signals are split from patient-support apparatus **10** controller signals.

[**0041**] Referring now to **FIGS. 3A, 4**, and **6**, pendant **20** is contoured in shape with a grip area **96**, a speaker area **98**, and a mouthpiece area **100**. Pendant **20** further comprises two sides wherein a first side **86** has user input devices associated with bed control functions and a second side **88** has user input devices associated with telephone functions. The overall shape of pendant **20** provides an intuitive feel for the orientation of the device in use. Pendant **20** further comprises plurality nodules **110** which protrude from the perimeter of pendant **20**. Nodules **110** provide a discontinuous edge surface to absorb shock and provide improved gripping of the pendant **20**. The outer housing of pendant **20** is constructed of plastic in some embodiments, although any material(s) of suitable strength may be used.

[**0042**] First side **86** further comprises a speaker **46**, function buttons **90**, selector buttons **52**, and a nurse call button **50**. Function buttons **90** are selectable, such as by pressing, to choose a function of the bed to be operated. In the illustrative embodiment, functions include control of the height of patient-support apparatus **10** and articulation functions of patient-support apparatus **10** including head elevation and knee elevation. In other embodiments, functions controlled may include other patient controlled devices such as television channel up, channel down, volume up, volume down, radio, audio, direct lighting, or indirect lighting. Selector buttons **52** permit the user to provide input to the selected function. For example, if the television function is selected, selector buttons **52** will alter channel and volume settings on the television. Nurse call button **50** is used by patient **70** to engage communication with caregiver staff at a location remote from the patient room **38**. Selector buttons **52**, function buttons **90**, and nurse call button **50** are all back-lit to improve visibility of the respective buttons in low light situations and include raised areas to improve locating of the buttons by tactile feel, and provide an auditory feedback that the button has been activated. While certain functions are described herein, a person of skill in the art will appreciate that there are many other functions not listed herein which may be controlled by pendant **20**.

[**0043**] Audio signal from remote staff, television, or radio are communicated to patient **70** by speaker **46**. Patient **70** uses microphone **56** to speak to caregiver staff that is remote to the patient room **38**. Second side **88** of pendant **20** comprises a telephone. Second side **88** has a speaker **164**, a microphone **168**, a keypad **54**, a display **92**, function buttons **166**, and dial button **94**. Speaker **164** delivers audio to patient **70** from the telephone. Patient **70** speaks into the telephone through microphone **168**. Keypad **54** is used to enter telephone numbers to be dialed. Display **92** provides a visual display of the number dialed by patient **70**. Additionally, display **92** displays caller ID information and text to patient **70** as appropriate. Function buttons **166** provide additional menu driven functionality with the menu choices displayed on display **92**. Dial button **94** dials the number entered into the telephone and displayed on display **92**. Dial button **94** is also used to disconnect telephone connections when the call is complete. Key pad **54**, display **92**, function buttons **166**, and dial button **94** are all back-lit to improve visibility of the respective buttons in low light situations and

include raised areas to improve locating of the buttons by tactile feel, and provide an auditory feedback that the button has been activated.

[0044] Another embodiment, shown in **FIGS. 8, 9**, and **10**, comprises a support structure **40** with a first end **134** coupled to a mounting bar **66** and a second end **136** coupled to a holster **138**, with mounting bar **66** coupled to a device such as a patient-support apparatus **10**, a chair **60**, or an overbed table **62**. Mounting bar **66** is coupled to the device. Illustratively, mounting bar **66** is coupled to a head section of apparatus **10** as shown in **FIG. 8**, to an arm **336** of chair **60** as shown in **FIG. 9**, and to an end of table section **338** of overbed table **62**. First end **134** is coupled to mounting bar **66** by a clamp **64** lockable on mounting bar **66** in a plurality of positions. Support structure **40** is adjustable to position second end **136** in a plurality of positions. Holster **138** is coupled to second end **136**.

[0045] Holster **138** is configured to receive a pendant **20** as shown in **FIG. 7**. Holster **138** comprises two opposing arms **144** on each side, the arms curving around from the back **146** of holster **138**. Arms **144** are spaced such that pendant **20** (shown in phantom) is cradled in the arms **144** and top edges of arms **144** engage speaker area **98** to support pendant **20**. An electrical cord **32** is coupled to pendant **20** and fits between arms **144** as pendant **20** is placed in holster **138**. As pendant **20** cradles in holster **138**, pendant **20** is removable by patient **70** as necessary. An opposite end of electrical cord **32** is coupled to an interface box **112** which splits the telephone signal from the controller signal and further conducts the signal to each appropriate device. Support structure **40** is coupled to clamp **64**.

[0046] Support structure **40** comprises a flexibly positionable gooseneck member **340**. Referring to **FIG. 8**, support structure **40** is movable between a first position (in solid) on a left side of apparatus **10** and a second position (in phantom) on a right side of apparatus **10**. The gooseneck member **340** of support structure **40** can be moved relative to clamp **64** to a number of configured positions. Clamp **64** is moveable to a number of positions along mounting bar **66** and is lockable to fix support structure **40** in any desired position between the first and second positions. Second end of support structure **40** may be positioned on either side of patient-support apparatus **10**, or may be positioned such that patient **70** can access pendant **20** while sitting in a chair **60** adjacent to patient-support apparatus **10**. **FIG. 9** illustrates the same structure **40** attached directly to chair **60**, providing flexibility of positioning within the patient room with a first position shown in solid and a second position shown in phantom. Flexible positioning of pendant **20** allows patient **70** to access pendant **20** throughout the room.

[0047] **FIG. 10** further illustrates support structure **40** coupled to overbed table **62**. In this configuration, support structure **40** can be moved to different areas of the room with relative ease, permitting the pendant **20** to be positioned near a chair **60** or near a patient-support apparatus **10** as required in the particular circumstance. In this embodiment, electrical cord **32** is coupled to an interface box **112**. In an alternative embodiment, electrical cord **32** may be coupled to patient-support apparatus **10** and the signals split within patient-support apparatus **10**. While the illustrated embodiment shows interface box **112** mounted to a wall, it is contemplated that interface box may be located anywhere within a room as required to manage routing electrical cord **32**. In another embodiment, electrical cord **32** is routed through support structure **40**.

[0048] In still another embodiment, a support arm **150** is coupled to a structure **42** that is attached to a wall **148** of a hospital room as shown in **FIG. 11**. Support arm **150** comprises a first end **134** moveable to a plurality of positions along structure **42** and a second end **136** moveably positionable to a plurality of points in space. Support arm **150** further comprises a rigid portion **152** and a flexible portion **154**. Rigid portion **152** extends out away from structure **42**. Support arm **150** is coupled to structure **42** by a plate **160** which is retained in track **162** of structure **42**. Arm **150** is pivotable about axis **330** relative to plate **160**. Track **162** supports plate **160** which, in turn, supports arm **150**. Plate **160** is moveable horizontally in track **162** permitting adjustment of the position of support arm **150** relative to patient **70**. Holster **138** is coupled to second end **136**. Flexible portion **154** is mechanically coupled to rigid portion **152**. Flexible portion **154** is a flexibly positionable gooseneck member which permits holster **138** to be rotated and repositioned to vary the orientation of holster **138** and pendant **20**. While **FIG. 11** shows structure **40** adjacent to patient-support apparatus **10**, this structure **40** may be used adjacent to any location where a patient **70** or caregiver may find it useful. Holster **138**, as described above, permits pendant removal by patient **70**.

[0049] In another embodiment, holster **138** is coupled to a video display **176** as is shown in **FIG. 12**. Video display **176** is supported by a structural system **342** comprising a mount **170** coupled to a wall **148**. A universal coupler **174** is attached to mount **170**, wherein universal coupler **174** pivots in a plurality of directions. An arm **172** is attached to universal coupler **174** at a first end of arm **172** opposite mount **170**. A second universal coupler **174** is attached to arm **172** at a second end of arm **172**. A second arm **172** is attached to second coupler **174** at a first end of the second arm **172**. A cap **178** is coupled to a second end of second arm **172**. A hanger **180** is pivotably coupled to cap **178** and hanger **180** is configured to support video display **176**. The resulting system permits positioning of video display **176** in a plurality of positions relative to wall **148** with video display **179** orientable in a plurality of angles relative to patient **70**. Holster **138** is coupled to video display **176**. As discussed in previous embodiments, holster **176** is configured to receive pendant **20**. While **FIG. 12** shows structural system **342** adjacent to patient-support apparatus **10**, this structural system **342** may be used adjacent to any location where a patient **70** or caregiver may find it useful. Additionally, structural system **342** has mount **170** coupled to wall **148**. In alternative embodiments, mount **170**, may couple to any structure capable of supporting the load of video display **176**. The structural system may have plurality universal couplers **174** and plurality arms **172** as is required to accomplish the configuration desired and this disclosure should not be construed to be limited to two arms **172** and two couplers **174**.

[0050] **FIG. 13** illustrates yet another embodiment, wherein a pendant **182** functioning as both a telephone and a controller for one or more functions of a patient-support apparatus **10**, comprises a touchscreen display **184**, a speaker **186**, a microphone **200**, hard function keys for menu **300**, television **310**, telephone **312**, and nurse call **198**.

Pendant **182** provides multiple functions to a user from a single user interface. Touchscreen **184** is a liquid crystal display (LCD) in the illustrative embodiment. Other types of touchscreens may be used if desired. Touchscreen display **184** provides a menu driven interface, including at least a telephone keypad/display shown in **FIG. 14**, a plurality of menu screens as shown in **FIG. 15**, and a control screen as shown in **FIG. 16**. Pendant **182** has a similar shape as pendant **20** and interfaces with holsters **26** and **138** in a similar fashion to pendant **20**. Functions available to be controlled from pendant **182** include at least one function of a patient-support apparatus **10**. Additionally, radio, television, lighting, audio, games, internet access, and other similarly useful functions may be controlled from pendant **182**.

[**0051**] Function keys are programmed to activate a particular menu on touchscreen display **184** to eliminate the need to scroll through several menus to utilize a particular function. Function keys in this embodiment are a bed function key **300**, television key **310**, and telephone key **312**. The bed function key activates a touchscreen menu which allows the user to manipulate various patient-support apparatus **10** functions by touching appropriate fields of the touchscreen. The television key **310** activates a screen on display **184** (shown in **FIG. 13**) which allows the user to control television functions by touching any of the following fields appearing on touchscreen **184**: volume up **290**, volume down **288**, channel up **282**, channel down **284**, closed captioning **274**, radio **276**, indirect lighting **278** and direct lighting **280**. The telephone key activates a menu which allows the pendant to function as a telephone with touchscreen display **184** serving as an integrated telephone keypad/display as shown in screen **344** of **FIG. 14**. The telephone function includes touchscreen fields for volume up **290**, volume down **292**, a keypad **294**, number display **296**, and a ringer control **298**.

[**0052**] **FIG. 15** shows an alternative menu screen **346** on display **184** to be used to access information and entertainment. In the configuration shown in screen **346**, touchscreen display **184** provides a navigable menu display with a navigate-up user input **314**, a navigate-down user input **316**, a select user input **318**, and a menu display **320**. A user navigates through a series of menus by selecting the appropriate item to be taken to another screen. **FIG. 16** shows a simplified television control screen **348**. On screen **348**, only television controls are displayed including channel up **282**, channel down **284**, volume up **286**, volume down **288**, and power **322**. Screen **348** provides a simple and easy to use interface for a user. It is contemplated that other functions may be utilized through the function key approach in alternative embodiments. In yet another embodiment, the function keys are programmable by a user to activate particular functions as preferred by that user.

[**0053**] A person having skill in the art will appreciate the various screens and functionality that may be programmed into pendant **182** beyond those which are described herein. For example, in some embodiments, pendant **182** operates as a television display screen. Some embodiments of pendant **182** include a menu function which displays a television program guide from which the user can select a program to be viewed without having to cycle through several channels to determine what programs are available. In some embodiments, display **184** may serve as a cursor control for on-screen television menus and displays. Some embodiments include games accessible by the patient as a form of entertainment.

[**0054**] In some embodiments, display **184** provides interactive communication with the patient regarding hospital services. For example, in some embodiments the patient reviews food service options and chooses meal items via pendant **182**. Some embodiments display the schedule of services for the patient such as physical therapy, speech therapy, tests to be run, timing of physician rounds, radiological services, blood draws, medication schedules, and the like. Some embodiments provide information to the user in the form of medical definitions and descriptions of procedures. In some embodiments, this may include video of procedures. In some embodiments, this may include narrated video of presentations on procedures and conditions.

[**0055**] In some embodiments, pendant **182** communicates with the patient-support apparatus **10** and provides interactive diagnostics for a service technician. This may include: information on electrical system components, trouble codes, an electronic service manual, a parts list, apparatus model number, apparatus serial number and/or apparatus manufacture date. In some embodiments, pendant **182** includes a service log whereby service to the apparatus is recorded for future reference.

[**0056**] In some embodiments, pendant **182** provides interactive communication between a patient and nursing staff. This includes a prioritized nurse call system allowing the patient to choose from a list of reasons why caregiver assistance is requested. Reasons listed include: pain relief needed, restroom assistance needed, question, linen assistance needed, equipment alarm is sounding, and the like. Some embodiments include a 2-way camera with a camera mounted to pendant **182** such that the patient and caregiver can see each other while communicating through the nurse call system.

[**0057**] In some embodiments, pendant **182** provides interactive assistance with patient care. For example, in some embodiments pendant **182** communicates with an automated medication delivery system, prompting the patient to enter a password when medication is due and deliver the medication after the correct password has been entered. In some embodiments, pendant **182** recognizes a patient or caregiver fingerprint and automatically delivers the medication upon proper authorization by the patient or caregiver. In still other embodiments, pendant **182** prompts a patient to respond to a motor-sensory response test which stimulates the patient and evaluates patient response as a measure of patient motor-sensory functioning.

[**0058**] In still another embodiment, shown in **FIGS. 17 and 18**, a pendant **210** operating as both a telephone and a controller of at least one function of a patient-support apparatus **10**, comprises a first side **220**, a second side **222**, a grip area **236**, a concave edge surface **212**, and a cover **238**. First side **220** further comprises plurality function keys **216** operating at least one patient-support apparatus **10** articulation function, a plurality of selector keys **218**, and a nurse call button **234**. Second side **222** further comprises a speaker **214**, a microphone **232**, a keypad **224**, a display **226**, a dial button **228**, and a plurality of phone selector keys **230**. Concave edge surface **212** is configured to interface with convex surfaces **128**, **129** of siderail **18**. Cover **238** allows

pendant **210** to be snapped into siderail **18** and retained through an interference fit between cover **238** and siderail **18**. The fit is further enhanced through the mating of concave surface **212** and convex surfaces **128**, **129**. Cover **238** further comprises a grip area **236** at a cord end **240** of pendant **210**. Grip area **236** has a reduced width and rounded contour at cord end **240**.

[**0059**] First side **220** has a controller for articulation functions of patient-support apparatus **10** and other devices in the patient room. The other devices controlled include television volume up and down, television channel up and down, radio, audio, direct lighting and indirect lighting. Second side **222** provides a user the functionality of a standard telephone. Included are keypad **224**, a redial button **324**, display **226**, phone selector keys **230**, speaker **214**, and microphone **232** similar to telephone embodiment described above. Pendant **210** is configured so that when attached to siderail **18**, only first side **220** faces toward the patient to present the bed function keys **216** to the patient. Orientation of pendant **210** in siderail **18** is accomplished by having cover **238** shaped so that pendant **210** can only snap into siderail with first side **220** exposed.

[**0060**] In some embodiments pendants **20**, **182**, **210**, are substantially waterproof. In other embodiments, pendants **20**, **182**, **210** further comprise a transparent sanitary cover (not shown). The sanitary cover is removable and is intended to be patient specific so as to reduce potential for cross contamination and reduce time to clean between patients. The sanitary cover also includes anti-microbial agents in the materials selected. In some embodiments, the sanitary cover may be transparent. Some embodiments of pendants **20**, **182**, **210** utilize membrane switch technology to create single surface over all user inputs. The integrated user inputs improve cleanability of the user inputs.

[**0061**] Embodiments of pendants **20**, **182**, **210** may integrate additional technology into the telephone operation. Some embodiments will disable controller functionality on the opposite side of the pendant when the telephone is powered to prevent bed movement while the pendant is being operated as a phone. Some embodiments will operate as both a standard telephone and a speakerphone. Some embodiments will allow incoming calls to be redirected to receive a message that the patient is not receiving calls. Some embodiments will automatically mute television or radio audio when the telephone is answered. Some embodiments will flash LEDs when a call is incoming and the ringer is turned off.

[**0062**] Alternative embodiments of pendants **20**, **182**, **210** have wireless coupling to a wireless receiver **244** as shown in **FIG. 19**. Pendant **20**, **182**, or **210** sends a wireless signal **248** when patient **70** makes an input. The wireless receiver **244** processes the wireless signal **248** and routes the signal to the appropriate system such as the nurse station, device controls, or telephone system. In this embodiment, wireless signal **244** is a radio frequency (RF) signal. In another embodiment, the wireless signal **244** may be infra-red (IR). In the wireless embodiment, the need for electrical cord **32** is eliminated. This increases the mobility of pendant **20**, **182**, or **210**.

[**0063**] Although certain illustrative embodiments have been described in detail above, variations and modifications exist within the scope and spirit of this disclosure as described and as defined in the following claims.

1. A patient-support apparatus, the apparatus comprising

a frame,

a siderail coupled to the frame,

a hand-held pendant functioning as both a telephone and a controller to receive user inputs that control at least some patient-support apparatus functions; and

a holster coupled to the siderail and moveable to a plurality of positions on the siderail, the holster being configured to hold the pendant until removed by a user.

2. The patient-support apparatus of claim 1, wherein the pendant is substantially waterproof.

3. The patient-support apparatus of claim 1, wherein the pendant further comprises an electrical cord which couples the pendant to the patient-support apparatus.

4. The patient-support apparatus of claim 3, wherein the electrical cord is retractable.

5. The patient-support apparatus of claim 1, wherein the pendant further comprises a wireless connection which couples the pendant to the patient-support apparatus.

6. The patient-support apparatus of claim 1, wherein the pendant further comprises a touchscreen user interface.

7. The patient-support apparatus of claim 1, wherein the pendant is configured to disable control of the patient-support apparatus when the telephone is in use.

8. The patient-support apparatus of claim 1, where in the pendant is configured to mute television and other audio when the telephone is answered.

9. A communication and control apparatus for use by a person in a patient room having a patient-support apparatus therein, the communication and control apparatus comprising

a hand-held pendant functioning as both a telephone and a controller to receive user inputs that control at least some patient-support apparatus functions,

a support adjustable to a plurality of positions coupled to the patient-support apparatus; and

a holster coupled to the support, the holster being configured to hold the pendant until removed by a user.

10. The communication and control apparatus of claim 9, wherein the pendant is substantially waterproof.

11. The communication and control apparatus of claim 9, wherein the pendant further comprises an electrical cord which couples the pendant to the patient-support apparatus.

12. The communication and control apparatus of claim 9, wherein the cord is retractable.

13. The communication and control apparatus of claim 12, wherein the electrical cord passes through the support.

14. The apparatus of claim 9, wherein the pendant further comprises a wireless connection which couples the pendant to the patient-support apparatus.

15. The communication and control apparatus of claim 9, wherein the pendant further comprises a touchscreen user interface.

16. The communication and control apparatus of claim 9, wherein the pendant is configured to disable control of the patient-support apparatus when the telephone is in use.

17. The communication and control apparatus of claim 9, where in the pendant is configured to mute television and other audio when the telephone is answered.

18. A communication and control apparatus for use by a person in a patient room having a patient-support apparatus therein, the communication and control apparatus comprising

a hand-held pendant functioning as both a telephone and a controller to receive user inputs that control at least some patient-support apparatus functions, the hand-held pendant having a touchscreen user input that displays a first screen for bed control and a second screen for telephone control.

19. The communication and control apparatus of claim 18, wherein the pendant is configured to disable control of the patient-support apparatus when the telephone is in use.

20. The communication and control apparatus of claim 18, where in the pendant is configured to mute television and other audio when the telephone is answered.

21. A communication and control apparatus for use by a person in a patient room having a structure and a patient-support apparatus therein, the communication and control apparatus comprising

a hand-held pendant functioning as both a telephone and a controller to receive user inputs that control at least some patient-support apparatus functions,

a support adjustable to a plurality of positions adapted to be coupled to a structure in the patient room; and

a holster coupled to the support, the holster being configured to hold the pendant until removed by a user.

22. The communication and control apparatus of claim 21, wherein the pendant is substantially waterproof.

23. The communication and control apparatus of claim 21, wherein the pendant further comprises an electrical cord which couples the pendant to the patient-support apparatus.

24. The communication and control apparatus of claim 21, wherein the cord is retractable.

25. The communication and control apparatus of claim 24, wherein the electrical cord passes through the support.

26. The apparatus of claim 21, wherein the pendant further comprises a wireless connection which couples the pendant to the patient-support apparatus.

27. The communication and control apparatus of claim 21, wherein the pendant further comprises a touchscreen user interface.

28. The communication and control apparatus of claim 21, wherein the pendant is configured to disable control of the patient-support apparatus when the telephone is in use.

29. The communication and control apparatus of claim 21, where in the pendant is configured to mute television and other audio when the telephone is answered.

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